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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,881	10/05/2001	Stanford R. Ovshinsky	2075	4506

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ENERGY CONVERSION DEVICES, INC.  
2956 WATERVIEW DRIVE  
ROCHESTER HILLS, MI 48309

EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/971,881	<b>Applicant(s)</b> OVSHINSKY ET AL.	
	<b>Examiner</b> Hai Vo	<b>Art Unit</b> 1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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1. Non-elected claims 21-30 have been canceled in the amendment received on 06/17/2003.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-19 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al (US 6,087,580) in view of Ozin et al (US 5,320,822). Ovshinsky discloses a non-single crystal silicon alloy material including regions of intermediate range order that has atomic aggregates of very short range periodicity and comprises of a plurality of highly **order**, relatively small atomic aggregations no more than 50 atomic diameter (abstract). The claimed range of thickness is completely within the values disclosed by Ovshinsky. The semiconductor comprises germanium, carbon, oxygen, dopant (column 9, line 10). The semiconductor includes hydrogen, fluorine, nitrogen (column 4, lines 58-62). The semiconductor material has the coordinatively irregular structures disposed in a matrix which is a mixture of amorphous and microcrystalline materials (claim 1). The material is in form of a thin film which is useful in devices such as photovoltaic devices, diodes, transistors and photoreceptors. Ovshinsky does not specifically disclose the distorted tetrahedral

symmetry of the bonding configuration within the material. However, Ozin is directed to a crystalline microporous solid wherein the **ordered** framework structure of the microporous material possesses both regular and distorted tetrahedral symmetry of the bonding configuration (column 4, lines 30-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the intermediate range order silicon alloy material having the distorted tetrahedral symmetry of the bonding configuration because the tetrahedral distortion have been obviously included in the ordered framework structure of the crystalline microporous material.

With regard to claim 19, Ovshinsky does not specifically disclose the width of each of aggregations. Ovshinsky does disclose the exact dimension of the aggregations in the semiconductor material will depend upon the particular semiconductor material in question (column 6, lines 8-10). Since the width of aggregations is not critical to providing unexpected results and the semiconductor material is widely used in a variety applications, in the absence of unexpected results, the exact dimension of the aggregations in the semiconductor material would have been recognized by one skilled in the art as dependent upon the particular semiconductor material in use and to modify it to be suitable for its uses.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al (US 6,087,580) in view of Ozin et al (US 5,320,822) as applied to

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claim 1 above, in view of Tsuo et al (US 5,627,081) substantially as set forth in the Office Action mailed on 03/27/2003.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-19 and 31-34 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,087,580 in view of Ozin et al (US 5,320,822) for the reasons set forth in the paragraph no. 3.

### **Response to Arguments**

7. The 102 art rejections have been overcome by the present amendment and response.
8. Applicant's arguments with respect to claims 1-20, and 31-34 have been considered but are moot in view of the new ground(s) of rejection.
9. The Declaration has been entered and fully considered but it is not found persuasive. The declaration states that the central structural unit of the claimed

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subject matter is coordinately irregular structure that has a bonding configuration of silicon distorted from a regular tetrahedral bonding configuration. This special feature makes the claimed subject matter distinguish over the materials in the cited references. However, there is no X-ray diffraction or neutron diffraction or factual evidence to support Applicants' arguments. In addition, nothing in the declaration is specific about the Mr. Pashmakov's expertise in the field of semiconductor material technology. The examiner suggests that the statements in the declaration would be greatly persuasive if Mr. Boil Pashmakov establishes himself to be an expert in the semiconductor technology to which the claimed invention is related. The additional affidavit would be deemed necessary to overcome the finding of obviousness.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on M, T, Th and F, 8:30-6:00 and alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV  
September 4, 2003



TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700